

REMARKS

Claims 15-43 and 45-53 were previously pending in the application. Claims 1-53 have now been cancelled. Claims 54 – 87 have been added and are currently pending.

New claims 54-87 reflect generally much of the content in claims 15-53 but have been rewritten for clarity purposes. Support for the new claims including any additional limitations may be found in the original claims 15-53; FIGS. 7 and 9; and pages 6-8, 18 of the specification. No new matter has been added.

The examiner had previously rejected claims 15-53 under 35 USC 103 over applicant's admitted prior art FIG. 8 and Begault. Applicants believe that the amendments overcome the rejections and therefore respectfully request a prompt reconsideration of the claims. The independent claims include a clarifying limitation that the gain adjustments are based on an HRTF pair at a reference distance and the gain applied separately based on a smaller near field distance between the sound source and the listener's head.

Applicants gratefully acknowledge the examiner's consideration and cooperation in setting up and conducting a telephonic Office interview on Nov. 10, 2005. Claim 15 and new claim 54 were discussed. No resolution was reached.

Claim Rejections Under 35 U.S.C. §103

The examiner had rejected claim 15 under 35 USC 103 based on applicant's admitted prior art (FIG. 8) and Begault. Applicants believe that the added claims overcome any rejections based on the cited prior art. In particular new claim 54 includes the limitations that the spectral shaping of the signal is based on an HRTF pair determined for a **reference distance** between the sound source and the listener's head. The claim also requires the application of gain factors to each of the channels, the gain factors determined based on a selected **near field distance** that is smaller than the larger reference distance. There is no teaching or suggesting in Begault or any other cited prior art of the adjustments to the signal being based on two different distances.

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Begault generally teaches conventional HRTF filtering. In particular, the examiner points out that Begault teaches that choosing respective values of magnitude for a left and right channel based on the distances to the ears. Turning to FIGS. 2.14 and 2.15 cited by the examiner, applicants submit that these merely reflect the measured HRTF's for a left and right ear at respectively for a sound source at a 90 degree azimuth location (FIG. 2.14) and for 2 different elevations for the left ear (FIG. 2.15). This again refers to conventional HRTF measurements and fails to suggest basing spectral shaping on an HRTF at a "reference" distance and a gain adjustment determined at a second distance (a near field distance). That is, Begault's teaches only one distance, the distance associated with the HRTF.

This difference is important in many cases, including for example providing more accurate near field intensity levels in an efficient processing device. More particularly, using the conventional HRTF suggested by Begault would require a digital filter to implement HRTF's determined for the relevant azimuth and elevation positions for various head to source distances. In contrast, using the inventive technique, an HRTF measured for a reference distance, for example 1.0 m, can be used to accurately simulate the near field (a distance less than 1.0 meter) by applying the gain modifications recited in the claims without resorting to an HRTF library for each azimuth, elevation, and distance combination. Hence using the inventive technique can use a much-reduced library of HRTF's to accomplish the desired result. This example is merely illustrative of one advantage and does not limit the scope of the claims.

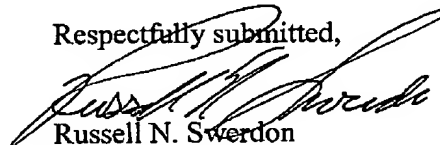
Independent claims 66, 75, 83, and 86 are submitted to be allowable for the same reasons as discussed above with respect to claim 54. As such, applicants believe that none of the references, either alone or in combination, teach or suggest all of the limitations of the independent claims. Claims 55-65, 67-74, 76-82, 84-85, and 87 are dependant claims and are submitted to be allowable for at least their dependencies from an allowable claim. Moreover, the dependent claims recite additional limitations, and are therefore allowable for these reasons as well. Further discussion of these distinctions is believed unnecessary in light of the distinctions discussed above relative to the independent claims.

The arguments presented in the remarks section of this amendment are believed to provide an adequate response for asserting the allowability of all of the presently pending claims in this present application. To the extent that the applicant has not addressed some issues raised by the Examiner in the Office Action, applicant believes that such unaddressed issues do not require a response at the present time since allowability of the claims has been asserted by the applicant based upon other grounds. However, applicant's lack of response to any of the issues raised by the Examiner does not constitute an admission by the applicant as to the accuracy of the Examiner's assertions with respect to such issues. Applicant specifically reserves the right to respond to such issues at a later time during the prosecution of the present application, should such a need arise.

Conclusion

Accordingly, it is submitted that all issues in the Office Action have been addressed, and withdrawal of the rejections is respectfully requested. Applicants believe that this application is in condition for allowance, and respectfully request a prompt passage to issuance. If the Examiner believes that a telephone conference would expedite the prosecution of this application, he is invited to contact the Applicants' undersigned attorney at the telephone number set out below.

Respectfully submitted,



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